Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A process for forming a multilayer three-dimensional structure, comprising:

(a) forming a layer of at least one material on a substrate that may include one or more previously deposited layers of one or more materials;

(b) repeating the forming operation of "(a)" one or more times to form at least one subsequent layer on at least one previously formed layer to build up a three-dimensional structure from a plurality layers;

wherein the forming of at least one layer, comprises:

(1) supplying a substrate on which one or more successive depositions of one or more materials may have occurred;

(2) supplying a multi-cell mask, wherein each cell is separated from other cells by a material, wherein each of a plurality of the cells of the mask each comprise an independently controllable electrode~~s~~, and wherein a pattern of dielectric material extends beyond the cell electrodes for proximate or contact positioning relative to the substrate and for forming process pockets when such proximate or contact positioning is achieved;

(3) bringing the multi-cell mask and the substrate into proximate positioning or contact such that electrochemical process pockets are formed having a desired registration with respect to any previous depositions and providing a desired electrolyte solution such that the solution is located within the electrochemical process pockets;

(4) selectively etching material from the substrate or previously deposited material to form at least one void, comprising applying a desired electrical activation to at least one selected cell electrode and to the substrate; and

(5) depositing a selected material into at least a portion of the at least one void.

Claim 2 (original): The process of claim 1 wherein a plurality of the cells of the multi-cell mask comprise a passage in proximity to the cell electrode for allowing ion exchange between the electrolyte in the process pockets and a larger volume of electrolyte located outside the process pockets such that ions may be transferred between the substrate and one or more electrodes located outside the process pockets.

Claim 3 (original): The process of claim 1 wherein selected cells are activated in a manner to allow selective deposition on to the substrate to occur such that any inadvertent etching of material from those cells is at least partially compensated for.

Claim 4 (original): The process of claim 1 wherein the formation of the one or more voids on a given layer comprises a plurality of selective etching operations using a multi-cell mask wherein at least a portion of the etching operations have positions that are offset from previous etching positions.

Claim 5 (original): The process of claim 1 wherein, the operation of at least a portion of the cells of the multi-cell mask is tested by etching material using the mask and examining the resulting depositions.

Claim 6 (original): The process of claim 5 wherein an algorithm is used to avoid reliance on etching from any cells found to be faulty, wherein the algorithm comprises one or more of:

a. avoidance of etching using a faulty cell by positioning the faulty cell in a location not requiring etching,

b. performing an extra etching operation by positioning a non-faulty cell at a required position if a faulty cell was at that position during a previous etching operation or is anticipated to be at that position during a subsequent etching operation,

c. selecting a multi-cell mask from a plurality of multi-cell masks where the selection is made such that no faulty cells exist on the selected multi-cell mask in regions that will be used for etching, or

d. attempting to redress any faulty cells by removing any material that may be inhibiting successful operation of the cell, retesting at least the faulty cells of the mask, and proceeding with use of the mask if the fault has been eliminated.

Claim 7 (original): The process of claim 1 wherein a multi-cell mask is used to perform depositions on a plurality of layers of the three-dimensional structure.

Claim 8 (original): The process of claim 1 wherein at least one material deposited on a plurality of layers comprises a sacrificial material and wherein the sacrificial material is removed to expose a desired three-dimensional structure.

Claim 9 (original): The process of claim 1 wherein during formation of at least one layer a multi-cell mask is used for both etching and depositing material.

Claim 10 (original): The process of claim 1 additionally comprising orbiting the mask during etching to cause etching by an individual cell to cover a larger region than that defined by dimensions of the cell.

Claim 11 (currently amended): A process for forming a multilayer three-dimensional structure, comprising:

(a) forming a layer of at least one material on a substrate that may include one or more previously deposited layers of one or more materials;

(b) repeating the forming operation of "(a)" one or more times to form at least one subsequent layer on at least one previously formed layer to build up a three-dimensional structure from a plurality layers;

wherein the forming of at least one layer, comprises:

(1) supplying a substrate on which one or more successive depositions of one or more materials may have occurred;

(2) supplying a multi-cell mask, wherein each cell is separated from other cells by a material, wherein each of a plurality of the cells of the mask each comprise an independently controllable electrode~~s~~, wherein a pattern of dielectric material extends beyond the cell electrodes for proximate or contact positioning relative to the substrate for forming electrochemical process pockets when such proximate or contact positioning is achieved;

(3) bringing the multi-cell mask and the substrate into proximate positioning or contact such that electrochemical process pockets are formed having a desired registration with respect to any previous depositions and providing a desired electrolyte solution such that the solution is located within the electrochemical process pockets;

(4) modifying the substrate or previously deposited material at selected locations, comprising applying desired electrical activation to at least one selected cell electrode and to the substrate; and

wherein a plurality of the cells of the multi-cell mask comprise a passage in proximity to the cell electrode for allowing ion exchange between the electrolyte in the process pockets and a larger volume of electrolyte located outside the process pockets such that ions may be transferred between one or more electrodes located outside the process pockets and a portion of the substrate forming part of at least one pocket.

Claim 12 (original): The process of claim 11 wherein the modifying of the substrate or previously deposited material further comprises activating at least one electrode outside the process pockets.

Claim 13 (original): The process of claim 11 wherein the modification to the substrate includes a deposition of material.

Claim 14 (original): The process of claim 11 wherein each process pocket operates substantially independently from other process pockets in its ability to modify the substrate or previously deposited material.

Claim 15 (original): The process of claim 11 wherein the modifying of the substrate or previously deposited material results in a modification of the substrate or previously deposited material in active pockets being at least five times greater than modification of the substrate or previously deposited material in inactive pockets.

Claim 16 (original): The process of claim 11 wherein the modifying of the substrate or previously deposited material results in a modification of the substrate or previously deposited material in active pockets being at least ten times greater than modification of the substrate or previously deposited material in inactive pockets.

Claim 17 (original): The process of claim 11 wherein the modification to the substrate includes an etching of material to form one or more voids, and wherein the process additionally comprises depositing a selected material into at least a portion of the voids.

Claim 18 (original): The process of claim 11 wherein a multiple step modification process is used wherein material is transferred to the cell electrode from either the substrate or from an electrode outside the process pockets and at least a portion of the material on the cell electrode is transferred to the other of the electrode outside the process pockets or the substrate, respectively.

Claim 19 (original): The process of any of claim 17 wherein the formation of a given layer begins with an initial deposition of a material and then proceeds to using a multi-cell mask to etch voids into the deposited material.

Claim 20 (original): The process of claim 19 wherein between the initial deposition and the etching operation, a planarization operation occurs.

Claim 21 (original): The process of claim 17 wherein a blanket deposition operation deposits material into the voids after etching.

Claim 22 (original): The process of claim 11 wherein at least one material deposited on a plurality of layers comprises a sacrificial material and wherein the sacrificial material is removed to expose a desired three-dimensional structure.

Claim 23 (original): The process of claim 17 wherein the deposition of material comprising an electroplating of material on to the substrate.

Claim 24 (original): The process of claim 11 wherein at least a portion of the cells comprise multiple independently controllable electrodes.

Claim 25 (original): The process of claim 17, wherein during selective etching from the substrate, active cells have their cell electrodes set at a floating potential.

Claim 26 (original): The process of claim 17, wherein during selective etching from the substrate, inactive cells have their cell electrodes set at a potential equal to or greater than that of the substrate.

Claim 27 (original): The process of claim 12 wherein during deposition onto the substrate, active cells have their cell electrodes set at a floating potential.

Claim 28 (original): The process of claim 12 wherein during deposition onto the substrate, inactive cells have their cell electrodes set at a potential equal to or greater than that of an anode.

Claim 29 (original): The process of claim 12, wherein a selective or bulk etching operation is used to remove or at least reduce any thin depositions that occur in inappropriate locations.

Claim 30 (original): The process of claim 11 wherein the deposition regions are modified to at least partially account for any distortion that may result from any etching operations.

Claim 31 (currently amended): A process for forming a multilayer three-dimensional structure, comprising:

(a) forming a layer of at least one material on a substrate that may include one or more previously deposited layers of one or more materials;

(b) repeating the forming operation of "(a)" one or more times to form at least one subsequent layer on at least one previously formed layer to build up a three-dimensional structure from a plurality layers;

wherein the forming of at least one layer, comprises:

(1) supplying a substrate on which one or more successive depositions of one or more materials may have occurred;

(2) supplying a multi-cell mask, wherein each cell is separated from other cells by a material, wherein each of a plurality of the cells of the mask comprise a control means for selectively activating or inhibiting activation of the cell during an electrochemical process, and wherein a pattern of dielectric material extends beyond the control means for proximate or contact positioning relative to the substrate and for forming electrochemical process pockets when such proximate or contact positioning is made;

(3) bringing the multi-cell mask and the substrate into proximate positioning or contact such that electrochemical process pockets are formed having a desired registration with respect to any previous depositions and providing a desired electrolyte solution such that the solution is provided within the electrochemical process pockets; and

(4) selectively depositing a desired material onto the substrate or previously deposited material or selectively forming voids in the substrate or previously deposited material, comprising applying a desired activation to at least one control element that is used to control the activity of a selected cell, and applying a desired electrical activation to the substrate, and to one or more additional electrodes that may be located within individual cells or located external to the multi-cell mask.

Claim 32 (original): The process of claim 31 wherein at least a plurality of control elements each comprise at least two electrodes to which a desired electrical activation can be applied such that a current is conducted through a cell to cause formation of at least one gas bubble that inhibits the ability of that cell to contribute to deposition on or etching from an associated portion of the substrate.

Claim 33 (original): The process of claim 31 wherein at least a plurality of control elements each comprise a heating element that locally elevates the temperature of the electrolyte within a cell sufficiently to cause formation of at least one gas bubble that inhibits the ability of that cell to contribute to deposition on or etching from an associated portion of the substrate.

Claim 34 (original): The process of claim 31 wherein at least a plurality of control elements each comprise a mechanical element that can be shifted by heating or electrostatic action between an active position and an inactive position.

Claim 35 (original): The process of claim 31 wherein at least a plurality of control elements each comprise a temperature changing component that can contribute to causing either one or both of increasing or lowering the mobility of ion transportation within a cell relative to other cells such that a sufficient differential in deposition or etching between cells occurs such that a desired selectivity is obtained.

Claim 36 (original): The process of claim 31 wherein at least a plurality of control elements are used to control a plurality of cells, with each control means comprising at least one electrode to which a desired electrical activation can be applied such that current flow from a region outside the pockets to a region inside the pockets is allowed or inhibited

Claim 37 (original): The process of claim 31 wherein at least a plurality of control elements each comprise a radiation source that can cause formation of at least one gas bubble that inhibits the ability of that cell to contribute to deposition on or etching from an associated portion of the substrate.

Claim 38 (original): The process of claim 31 wherein at least a portion of the dielectric material that extends beyond the cell electrodes comprises a conformable material.

Claim 39 (original): The process of claim 31 wherein an end of the conformable material includes ridges or depressions that inhibit complete sealing between the conformable material and the substrate such that electrolyte can migrate between cells if the control means creates excess pressure on the liquid within a cell.

Claim 40 (original): The process of claim 31 where activation of the control means originates from deeper interior regions within the multi-cell mask and works outward toward peripheral regions of the mask.

Claim 41 (original): The process of claim 31 wherein a plurality of the cells of the multi-cell mask comprise a passage in proximity to the cell electrode for allowing ion exchange between the electrolyte in the process pockets and a larger volume of electrolyte located outside the process pockets such that ions may be transferred between the substrate and one or more electrodes located outside the process pockets.

Claim 42 (original): The process of claim 31 wherein a plurality of the cells of the multi-cell mask comprise a source of deposition material or an electrode for receiving etched material from the substrate.

Claim 43 (original): The process of claim 31 wherein a desired material is selectively deposited onto the substrate via the multi-cell mask.

Claim 44 (original): The process of claim 31 wherein material is selectively etched from the substrate via the multi-cell mask.

Claim 45 (original): The process of claim 31 wherein a single multi-cell mask is used for both selectively etching and for selectively depositing material.

Claim 46 (original): The process of claim 31 wherein the mask and substrate are not brought into intimate contact but are positioned in close enough proximity to one another to allow selective deposition or etching to occur such that a ratio in deposition height or etching depth between active cells and inactive cells is at least a factor of five.

Claim 47 (original): The process of claim 46 wherein the factor is at least ten.

Claim 48 (currently amended): A process for forming a multilayer three-dimensional structure, comprising:

(a) forming a layer of at least one material on a substrate that may include one or more previously deposited layers of one or more materials;

(b) repeating the forming operation of "(a)" one or more times to form at least one subsequent layer on at least one previously formed layer to build up a three-dimensional structure from a plurality layers;

wherein the forming of at least one layer, comprises:

(1) supplying a substrate on which one or more successive depositions of one or more materials may have occurred;

(2) supplying a multi-cell mask, wherein each cell is separated from other cells by a material, wherein each of a plurality of the cells of the mask comprise a control element~~s they~~ that may be used in at least one of activating or deactivating the cells;

(3) bringing the multi-cell mask and the substrate into proximate positioning without achieving contact sealing between cells of the mask and the substrate and providing a desired electrolyte solution such that the solution is provided between the mask and the substrate; and

(4) selectively depositing a desired material onto the substrate or previously deposited material or selectively etching a material from the substrate or

previously deposited material, comprising applying a desired electrical activation to at least one desired cell electrode and to the substrate.

Claim 49 (original): A process for forming a multilayer three-dimensional structure, comprising:

(a) forming a layer of at least one material on a substrate that may include one or more previously deposited layers of one or more materials;

(b) repeating the forming operation of "(a)" one or more times to form at least one subsequent layer on at least one previously formed layer to build up a three-dimensional structure from a plurality layers;

wherein the forming of at least one layer, comprises:

(1) supplying a substrate on which one or more successive depositions of one or more materials may have occurred;

(2) supplying a multi-cell mask, comprising:

(i) a reusable portion comprising a material separating individual cell regions and at least one independently controllable electrode associated with each cell to control activation of each respective cell; and

(ii) a separate portion that is positioned on the substrate or previous formed layer with a desired alignment and position and where the separate portion provides a dielectric barrier in a boundary region between each cell of the reusable portion;

(3) bringing the reusable portion of the multi-cell mask into proximate positioning or contact with the separate portion such that electrochemical process pockets are formed having a desired registration with respect to any previous depositions and providing a desired electrolyte solution such that the solution is located within the electrochemical process pockets;

(4) selectively depositing material to the substrate or previously deposited material or etching material from the substrate or previously deposited material to form at least one void, comprising applying a desired electrical activation to at least one selected cell electrode and to the substrate.

Claim 50 (original): The process of claim 49 wherein the separate portion comprises a patterned photoresist that is adhered to the substrate or previously formed layer.

Claim 51 (original): The process of claim 49 wherein the material is selectively etched from the substrate or previously deposited material using a multi-cell mask to form at least one void and wherein the forming of at least one layer comprises depositing a selected material into at least a portion of the at least one void.

Claim 52 (original): A process for forming a multilayer three-dimensional structure, comprising:

(a) forming a layer of at least one material on a substrate that may include one or more previously deposited layers of one or more materials;

(b) repeating the forming operation of "(a)" one or more times to form at least one subsequent layer on at least one previously formed layer to build up a three-dimensional structure from a plurality layers;

wherein the forming of at least one layer, comprises:

(1) supplying a substrate on which one or more successive depositions of one or more materials may have occurred;

(2) supplying a mask having at least one cell that is smaller than or equal to the desired resolution that will be used in modifying the substrate, wherein the at least one cell comprises at least one independently controllable cell electrode, and wherein a pattern of dielectric material extends beyond the cell electrodes for proximate or contact positioning relative to the substrate for forming a process pocket when such proximate or contact positioning is achieved;

(3) bringing the mask into proximate positioning or contact with the substrate or previously deposited material such that an electrochemical process pocket is formed having a desired registration with respect to any previous depositions and providing a desired electrolyte solution such that the solution is located within the electrochemical process pocket;

(4) selectively depositing material to the substrate or previously deposited material or etching material from the substrate or previously deposited material to form at least one void, comprising applying a desired electrical activation to at least one cell electrode and to the substrate;

(5) moving the mask to a plurality of new locations and repeating operation (4) a plurality of times.